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(54) **MAIZE CYTOPLASMIC MALE STERILITY (CMS) S-TYPE RESTORER GENE RF3**

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CPC ..... **C12N 15/8287** (2013.01); **A01H 1/02** (2013.01); **C07K 14/415** (2013.01); **C12N 15/8289** (2013.01)

(58) **Field of Classification Search**  
None  
See application file for complete search history.

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#### (57) ABSTRACT

A newly identified protein that is encoded by a polynucleotide sequence associated with cytoplasmic male sterility restorer activity (RF3) is described. The cytoplasmic male sterility restorer gene can be inserted through breeding introgression into plant genomes to restore cytoplasmic male sterility in plants. Further applications of the newly identified polynucleotide sequence associated with cytoplasmic male sterility restorer activity include a mutation (rf3) which results in cytoplasmic male sterility. The cytoplasmic male sterility restorer gene can be inserted through breeding introgression into plant genomes to result in cytoplasmic male sterility in plants. Methods for detecting the cytoplasmic male sterility restorer (RF3) and the cytoplasmic male sterility (rf3) gene sequences are further described.

**6 Claims, 10 Drawing Sheets**